

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

NAVARRINI et al

Group Art Unit: Not yet assigned

Serial No.: New Application

Examiner: Not yet assigned

Filed: March 4, 2002

Attorney Dkt. No.: 108910-00056

For: PERFLUORODIACYLPEROXIDES AS POLYMERIZATION INITIATORS

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

March 4, 2002

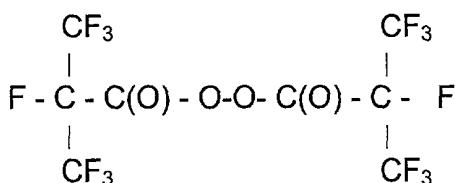
Sir:

Prior to calculation of the filing fees and initial examination of the application, please amend the above-identified application as follows:

IN THE CLAIMS:

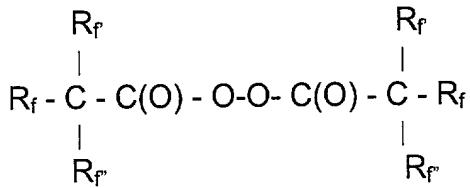
Please amend claims 4-8 as follows. A copy of the marked up original claims is attached to this response showing the changes as set forth in amended 37 CFR 1.121.

4. (Amended) A polymerization process according to claim 2, wherein at temperatures of the order of 50° - 80°C, the perfluorodiacylperoxides of structure (C) or the compound of structure (A) having the formula:



are used.

5. (Amended) A polymerization process according to claim 2, wherein at temperatures of the order of -20° - +25°C, the perfluorodiacylperoxides of structure (A) of formula:



are used, wherein when R_f is $-CF_3$, R_f and R_f' are C_1-C_3 linear or branched perfluoroxyalkyl groups.

6. (Amended) A polymerization process according to claim 2, wherein the fluorinated monomers are selected from:

- C_2-C_8 perfluoroolefins, such as tetrafluoroethylene (TFE), hexafluoropropene (HFP);
- C_2-C_8 hydrogenated fluoroolefins, such as vinyl fluoride (VF), vinylidene fluoride (VDF), trifluoroethylene, $CH_2=CH-R_f$ perfluoroalkylethylene, wherein R_f is a C_1-C_6 perfluoroalkyl, hexafluoroisobutene;
- C_2-C_8 chloro-fluoroolefins, such as chlorotrifluoroethylene (CTFE);
- $CF_2=CFOR_f$ (per)fluoroalkylvinylethers (PAVE), wherein R_f is a C_1-C_6 (per)fluoroalkyl, for example CF_3 , C_2F_5 , C_3F_7 ;
- $CF_2=CFOX$ (per)fluoro-oxyalkylvinylethers, wherein X is: a C_1-C_{12} alkyl, or a C_1-C_{12} oxyalkyl, or a C_1-C_{12} (per)fluoroxyalkyl having one or more ether groups;
- perfluorodioxoles, such as 2,2,4-trifluoro-5-trifluoromethoxy-1,3-dioxole (TTD), 2,2-bis-trifluoromethyl-4,5-difluoro-dioxole (PPD);

- sulphonic monomers, such as $\text{CF}_2=\text{CFOCF}_2\text{CF}_2\text{SO}_2\text{F}$;
- fluorinated dienes such as $\text{CF}_2=\text{CFOCF}_2\text{CF}_2\text{CF}=\text{CF}_2$,
 $\text{CF}_2=\text{CFOCCl}_2\text{CF}_2\text{CF}=\text{CF}_2$, $\text{CF}_2=\text{CFOCF}_2\text{OCF}=\text{CF}_2$, $\text{CF}_2=\text{CFOCF}_2\text{OCCl}=\text{CF}_2$,
 $\text{CF}_2=\text{FOC}(\text{CF}_3)_2\text{OCF}=\text{CF}_2$.

7. (Amended) A polymerization process according to claim 2, wherein the perfluorodiacylperoxide initiator is fed in a continuous way or by a single addition at the starting of the polymerization.

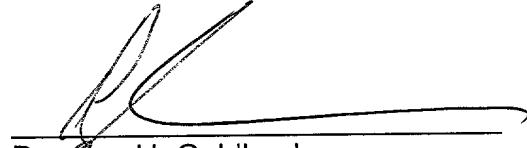
8. (Amended) A polymerization process according to claim 2, wherein the amount of perfluorodiacylperoxide initiator is in the range 0.0001% - 5% by moles with respect to the amount of the fed monomers.

REMARKS

Claims 1-8 are pending in this application. By this Amendment, claims 4-8 are amended to correct the multiple dependencies thereof and to place this application into better condition for examination. No new matter has been added.

In the event that there are any fees due with respect to the filing of this paper,
please charge Deposit Account No. 01-2300.

Respectfully submitted,



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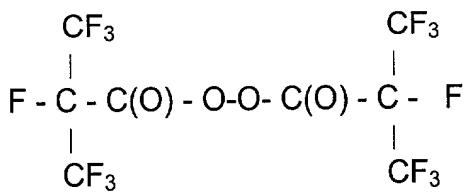
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Enclosures: Marked-up Copy of Amended Claims

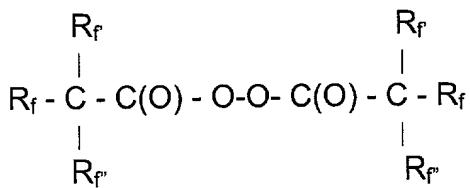
MARKED-UP COPY OF AMENDED CLAIMS
ATTY. DOCKET NO. 108910-00056

4. (Amended) A polymerization process according to [claims 2-3] claim 2, wherein at temperatures of the order of 50° - 80°C, the perfluorodiacylperoxides of structure (C) or the compound of structure (A) having the formula:



are used.

5. (Amended) A polymerization process according to [claims 2-3] claim 2, wherein at temperatures of the order of -20° - +25°C, the perfluorodiacylperoxides of structure (A) of formula:



are used, wherein when R_f is $-\text{CF}_3$, R_f and R_f' are $\text{C}_1\text{-C}_3$ linear or branched perfluoroxyalkyl groups.

6. (Amended) A polymerization process according to [claims 2-5] claim 2, wherein the fluorinated monomers are selected from:

- $\text{C}_2\text{-C}_8$ perfluorolefins, such as tetrafluoroethylene (TFE), hexafluoropropene (HFP);

- C₂-C₈ hydrogenated fluoroolefins, such as vinyl fluoride (VF), vinylidene fluoride (VDF), trifluoroethylene, CH₂=CH-R_f perfluoroalkylethylene, wherein R_f is a C₁-C₆ perfluoroalkyl, hexafluoroisobutene;
- C₂-C₈ chloro-fluoroolefins, such as chlorotrifluoroethylene (CTFE);
- CF₂=CFOR_f (per)fluoroalkylvinylethers (PAVE), wherein R_f is a C₁-C₆ (per)fluoroalkyl, for example CF₃, C₂F₅, C₃F₇;
- CF₂=CFOX (per)fluoro-oxyalkylvinylethers, wherein X is: a C₁-C₁₂ alkyl, or a C₁-C₁₂ oxyalkyl, or a C₁-C₁₂ (per)fluoroxyalkyl having one or more ether groups;
- perfluorodioxoles, such as 2,2,4-trifluoro-5-trifluoromethoxy-1,3-dioxole (TTD), 2,2-bis-trifluoromethyl-4,5-difluoro-dioxole (PPD);
 - sulphonic monomers, such as CF₂=CFOCF₂CF₂SO₂F;
 - fluorinated dienes such as CF₂=CFOCF₂CF₂CF=CF₂, CF₂=CFOCCI₂CF₂CF=CF₂, CF₂=CFOCF₂OCF=CF₂, CF₂=CFOCF₂OCCl=CF₂, CF₂=CFOC(CF₃)₂OCF=CF₂.

7. (Amended) A polymerization process according to [claims 2-6] claim 2, wherein the perfluorodiacylperoxide initiator is fed in a continuous way or by a single addition at the starting of the polymerization.

8. (Amended) A polymerization process according to [claims 2-7] claim 2, wherein the amount of perfluorodiacylperoxide initiator is in the range 0.0001% - 5% by moles with respect to the amount of the fed monomers.